

## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

REC'D 10 FEB 2005

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Applicant's or agent's file reference 24263	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IT 03/00034	International filing date (day/month/year) 29.01.2003	Priority date (day/month/year) 29.01.2003
International Patent Classification (IPC) or both national classification and IPC B65C3/06		
Applicant BENCO PACK S.p.A. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 5 sheets.

## 3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  01.06.2004	Date of completion of this report  09.02.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Balz, O  Telephone No. +49 89 2399-7218 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/IT 03/00034**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1, 3-8 as originally filed  
2, 2a, 2b filed with telefax on 25.01.2005

**Claims, Numbers**

1-10 filed with telefax on 25.01.2005

**Drawings, Sheets**

1/9-9/9 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
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International application No. **PCT/IT 03/00034**

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following document/s/:  
D1: DE 100 23 658 C (ADOLF ILLIG MASCHB GMBH & CO K) 18 October 2001 (2001-10-18)  
D2: US-A-4 208 237 (HEYNE CLARENCE A) 17 June 1980 (1980-06-17)  
D3: PATENT ABSTRACTS OF JAPAN vol. 010, no. 077 (M-464), 26 March 1986 (1986-03-26) & JP 60 219030 A (FUJI SEAL KOGYO KK), 1 November 1985 (1985-11-01)  
D4: US-A-3 767 496 (DOHERTY T ET AL) 23 October 1973 (1973-10-23)  
D5: DE 198 59 063 A (BERRENBAUM FRANK) 29 June 2000 (2000-06-29)
  
2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document): a labelling plant for a container (14) having a rim or a collar, comprising a device (21) for supporting and transporting at least one container suspended in an erect position acting from above on the container, means (15) for mounting a heat-shrinkable annular band (10) onto container acting from below, means (see paragraph 27) being provided to cause label to adhere to container by heat-shrinkage.  
The subject-matter of claim 1 differs from this known plant in that means for mounting a heat-shrinkable annular band onto container comprise at least one movable support plate for the label disposed vertically with which means for causing the heat-shrinkable annular band to adhere by heat-shrinkage are associated.  
The subject-matter of claim 1 is therefore new (Article 33(2) PCT).  
The problem to be solved by the present invention may be regarded as facilitating the integration of the labelling line along the container forming and filling line.  
The solution to this problem proposed in claim 1 of the present application is not disclosed in the prior art (documents D1-D5) and is thus considered as involving an inventive step (Article 33(3) PCT).
  
2. Claims 2-10 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

in the form of an annular band, so that it rests on the container outer rim.  
The container provided with the label is then fed through a heating tunnel  
where the label is made to adhere to the container body by heat. On  
termination of this operation the container must be again inverted, and  
5 then fed to packaging means of usual type.

The aforesaid method is complicated to carry out as each container must  
be inverted to enable the band-shaped label to be mounted on it from  
above. This complication is accentuated if the containers contain different  
products or the same product but of a different flavour. In such a case  
10 suitable means must be provided for handling the containers so that the  
correct label for the product concerned is applied.

An object of this invention is to overcome the drawbacks of the known art  
within the framework of a simple, reliable and rational solution, able to  
reduce the final cost.

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#### DISCLOSURE OF THE INVENTION

The invention attains this and other objects by virtue of the characteristics  
defined in the claims.

In particular, the invention provides a container labelling method  
20 comprising the following operative steps:

- a. predisposing a support device for at least one container having a  
mouth with which an outer rim is associated,
- b. from below, mounting onto the body of said at least one container a  
heat-shrinkable label in the form of an annular band,
- 25 c. causing the label to adhere to said container.

- 2a

The document DE 10023658 discloses a plant for applying a heat-shrinkable label or band to containers; the labels are transferred to a transport device and then moved to a position beneath the containers hanging from a conveyor belt. Lastly the labels are taken from the transport device and mounted onto the wall of the container, and later on the container with the label mounted thereon is transferred to a heating tunnel for causing each label to adhere to the body of the respective container. All the operations above can be carried out before the container filling.

Notwithstanding the plant disclosed in DE 10023658 presents the drawback that the heating of the labels in a separate location, after the labels have already been inserted onto the container renders difficult to put the labelling device in line with the container forming and filling line.

In other words, the need to provide a heating tunnel separated from the labelling apparatus not always consent a convenient lay out of the labelling line along the container forming and filling line.

15

2 b

in the form of an annular band, so that it rests on the container outer rim.

The container provided with the label is then fed through a heating tunnel where the label is made to adhere to the container body by heat. On termination of this operation the container must be again inverted, and

5 then fed to packaging means of usual type.

The aforesaid method is complicated to carry out as each container must be inverted to enable the band-shaped label to be mounted on it from above. This complication is accentuated if the containers contain different products or the same product but of a different flavour. In such a case

10 suitable means must be provided for handling the containers so that the correct label for the product concerned is applied.

An object of this invention is to overcome the drawbacks of the known art within the framework of a simple, reliable and rational solution, able to reduce the final cost.

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#### DISCLOSURE OF THE INVENTION

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In particular, the invention provides a container labelling method

20 comprising the following operative steps:

a. predisposing a support device for at least one container having a mouth with which an outer rim is associated,

b. from below, mounting onto the body of said at least one container a heat-shrinkable label in the form of an annular band,

25 c. causing the label to adhere to said container.

- 9 -

## CLAIMS

1. A labelling plant for a container having a rim or collar, comprising a device (3) for supporting and transporting at least one container suspended in an erect position acting  
5 from above on the container, means (4) for mounting a heat-shrinkable annular band (5) onto said container acting from below, means (6) being provided to cause said label to adhere to said container by heat-shrinkage, characterised in that said means for mounting a heat-shrinkable annular band onto said container comprise at least one movable support plate (42,52) for the label disposed vertically with which the means (6) for causing  
10 the heat-shrinkable annular band (5) to adhere by heat-shrinkage are associated.
2. A plant as claimed in claim 1, characterised in that said means (6) for causing the heat-shrinkable annular band (7) to adhere by heat-shrinkage comprises a system for delivering a hot fluid.
- 15 3. A plant as claimed in claim 2, characterised in that said hot fluid is steam.
4. A plant as claimed in claim 2, characterised in that said hot fluid is air.
- 20 5. A plant as claimed in claim 1, characterised in that said means for causing the heat-shrinkable annular band (5) to adhere to the container comprise a cylinder (54) and a plurality of hot fluid dispensing nozzles (55) supported by the movable support plate (52).
6. A plant as claimed in claim 1, characterised by that said movable support plate (42,  
25 52) is associated with a unit for maintaining vertical the heat-shrinkable annular band (5).



- 10 -

7. A plant as claimed in claim 6, characterised in that said unit for maintaining vertical the heat-shrinkable annular band (7) vertical comprises four vertical rods (45) branching from a second plate (43) connected to the movable support plate (42,52) by virtue of at least one cylinder-piston unit (44).
- 5
8. A plant as claimed in claim 7, characterised in that said vertical rods (45) are disposed on the perimeter of an imaginary circumference to maintain the label 5 widened while it is mounted onto the container.
- 10
9. A plant as claimed in claim 1 characterised in that said rods (45) are inserted through corresponding matching holes present in the movable support plate (42,52) and pass beyond said plate to externally receive the heat-shrinkable annular band (5).
10. A plant as claimed in claim 6, characterised in that said unit for maintaining vertical the heat-shrinkable annular band (7) vertical comprises four vertical rods (45) branching from a fixed plate (51) and inserted through corresponding matching holes present in the movable support plate (52) supported by the fixed plate (51) by virtue of at least one cylinder-piston unit (53).
- 15
- 20

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